

TRANSPORT OF A JUVENILE PINYON MOUSE (*PEROMYSCUS TRUEI*)

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On 15 July 1992 we observed an interesting mode of transport of a juvenile pinyon mouse (*Peromyscus truei*) by an adult female presumed to be its parent. The habitat was transitional between *Arctostaphylos/Ceanothus/Quercus* chaparral and mixed conifer forest in the San Jacinto Mountains, Riverside County, California, elevation 2100 m. We had been observing a 75-cm western rattlesnake (*Crotalus viridis*) that emerged from a burrow at 4:30 PM, remained stationary for a few minutes, and then moved directly to a fallen log 12 m away. Within 20 seconds after the snake went under the log, a small mammal emerged, moving at high speed. The mammal ran 8 m to a scrub oak (*Quercus dumosa*) and climbed to a limb 80 cm aboveground. While it was running, we had the impression of a grayish rodent 7–8 cm in head-body length, with large ears and a very bushy tail. Since no such mammal occurs in the area, we investigated further.

After approaching to within 30–40 cm, we observed an adult female pinyon mouse standing on the limb, with a juvenile (the large “tail” we had seen) firmly attached by its mouth to the nipple of one of the female’s left inguinal mammae. The juvenile’s eyes were open and its body mass appeared to be 0.40 that of the adult. It had gray juvenile pelage and appeared less than 3 weeks old. While the female turned her head back and forth and shifted position on the branch, the juvenile remained motionless beside her. There was no evidence of injury to either animal. After a few minutes, the female ran down the shrub to the ground, still dragging the juvenile bouncing along behind her. She then darted 4 m to a different log and began digging at its

underside, sending fragments of rotten wood and loam flying in all directions. Both mice were concealed within minutes.

“Nipple clinging” behavior has been reported for several species of *Peromyscus*, but we could find no published discussion of the phenomenon more recent than Layne (1968). Guetzow and Judd (1981) noted the onset of clinging as a developmental milestone in juvenile *P. leucopus*, but did not discuss its adaptive significance. This behavior apparently has received little field study; laboratory experiments have shown that it varies with age and species (King 1963), and that it may be related to emergency evacuation of the nest. Layne (1968) wrote:

The principal adaptive value of nipple clinging is probably reduction of litter losses through predation, although this assumption cannot presently be supported with good observational or experimental evidence.

Rand and Holt (1942) wrote that the behavior

may be of some importance . . . when the nest is threatened by an invading enemy, as for instance, a snake. Our experience when excavating burrows, however, did not give too much support to this.

Their hypothesis appears to be supported by our field observation reported here. Nipple-clinging behavior has been reported for certain other rodent genera, such as *Neotoma* (Hamilton 1953). Davis (1970) reviewed the literature on similar emergency transport of young by flying female bats.

Layne (1968) noted that clinging behavior by older juvenile *Peromyscus* sometimes occurs in non-emergency situations, as when the mother and young are foraging together. In this context, the attached juvenile walks

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behind the female rather than being dragged along. This behavior may explain the following related observation. Between 30 June and 10 July 1992 we conducted a mark-and-recapture study of small mammals in Riversidean sage scrub and alluvial scrub habitat just south of Highland, San Bernardino County, California. One 9-inch folding Sherman trap was found to contain two dead cactus mice (*Peromyscus eremicus*): a 3- to 4-week-old juvenile whose neck had been caught in the trap door, with its head inside the trap and the body hanging outside; and a lactating adult female, with one foot caught under the treadle and some caked blood on its venter. The adult was a recapture from the previous night; the juvenile was not marked. The most likely scenario is that the juvenile was clinging to the female's nipple when she entered the trap. The door apparently then slammed shut on the juvenile's neck, tearing it off the female. The use of longer Sherman traps (Slade et al. 1993) is recommended to reduce the incidence of this and other categories of trap injury.

LITERATURE CITED

- DAVIS, R. 1970. Carrying of young by flying female North American bats. *American Midland Naturalist* 83: 186-196.
- GUTZOW, D. D., AND F. W. JUDD. 1981. Postnatal growth and development in a subtropical population of *Peromyscus leucopus texanus*. *Southwestern Naturalist* 26: 183-191.
- HAMILTON, W. J., III. 1953. Reproduction and young of the Florida wood rat, *Neotoma f. floridana* (Ord). *Journal of Mammalogy* 34: 180-189.
- KING, J. A. 1963. Maternal behavior in *Peromyscus*. Pages 58-93 in H. L. Rheingold, ed., *Maternal behavior in mammals*. John Wiley & Sons Inc., New York.
- LAYNE, J. N. 1965. Ontogeny. Pages 145-253 in J. A. King, ed., *Biology of Peromyscus* (Rodentia). American Society of Mammalogists, Special Publication 2.
- RAND, A. L., AND P. HOST. 1942. Mammal notes from Highland County, Florida. Results of the Archbold Expeditions, No. 45. *Bulletin of the American Museum of Natural History* 80: 1-21.
- SLADE, N. A., M. A. EHLER, N. M. GRUENHAGEN, AND A. L. DAVELOS. 1993. Differential effectiveness of standard and long Sherman live-traps in capturing small mammals. *Journal of Mammalogy* 74: 156-161.

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